	PROJECT DESCRIPTION				A. EQUIPMEN	TO BE SUPPLIED BY SHA AND INSTALLED BY THE CONTRACTOR
1. G	ENERAL		QUANTITY	SPEC. SECT		141
	THIS PROJECT IS LOCATED AT THE INTERSECTION OF MD 144 (EAST PATRICK STREET) @ FRANKLIN STREET IN FREDERICK COUNTY MARYLAND AND INVOLVES THE CONSTRUCTION OF	900000	I EA	816		IZE 6 BASE MOUNTED CONTROLLER 900000 93.1 SF 813 FURNISH SHEET ALUMINUM SIGNS TO CONSIST OF:
	A NEW TRAFFIC SIGNAL.	900000	4 EA	0.0	AND CABINE	ET W/ SYSTEM PACKAGE RIO-12 (I) (36"x42") LEFT TURN YIELD ON GREEN
II. IN	TERSECTION OPERATION	300000	4 EA			DUR CHANNEL LOOP SIGN MAST ARM MOUNT WITH TIME DELAY OUTPUT
	THE PROPOSED TRAFFIC SIGNAL WILL OPERATE IN A NEMA SIX (6) PHASE, FULLY TRAFFIC ACTUATED MODE. THE MD 144 APPROACHES WILL OPERATE CONCURENTLY WITH THE WESTBOUND LEFT TURN	900000	4 EA	817	FURNISH PEI AND SIGN	M95-I (I) (78"x 24") MD I44 EAST PATRICK ST SIGN SINGLE FACED-MAST ARM MOUNT
	OPERATING IN AN EXCLUSIVE/PERMISSIVE PHASE. THE FRANKLIN STREET APPROACH WILL OPERATE SEPERATELY.		ENT TO BE F	FURNISHED AN	ND INSTALLED BY TI	D3-2 (2)(I6*x VARIABLE) FRANKLIN ST SIGN DUAL FACED-MAST ARM MOUNT
	A NEW EIGHT PHASE FULLY TRAFFIC ACTUATED CONTROLLER WITH FOUR (4) FOUR CHANNEL TIME			JANTITY	SPEC. SECTION	DESCRIPTION W3-3 (3) (36"×36") NEW SIGNAL AHEAD
DELAY OUTPUT LOOP DETECTOR AMPLIFIERS, TELEMETRY MODULE, INTERSECTION MONITOR WITH BATTERY BACK UP AND PRE-EMPTION CALL ISOLATION RELAY PACKAGE HOUSED IN A BASE MOUNTED CABINET.		100	, partitude	L.S.	104	FURNISH AND INSTALL MAINTENANCE OF TRAFFIC R3-7 (I) (30" × 30") RIGHT TURN MUST TURN RIGHT
		200		2 CY	104	R3-5L (I) (30" x 36") LEFT TURN ONLY TEST PIT EXCAVATION
III. SF	ECIAL NOTES	500	14	65 LF	SP 555	R3-5R (I) (30" x 36") RIGHT TURN ONLY FURNISH AND INSTALL 24" WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE (STOP BAR)
١.	IT IS THE RESPONSIBILTY OF THE CONTRACTOR TO CONFIRM GEOMETRICS PRIOR TO PLACING SIGNAL EQUIPMENT.	500		10 LF	SP 555	FURNISH AND INSTALL 12" WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE (CROSS WALK)
2.	THE SIGNAL SHOP WILL BE NOTIFIED TO PERFORM INTERNAL WIRING OF THE CABINET AT	500 500	•	20 LF 40 LF	SP 555 SP 555	FURNISH AND INSTALL 5" WHITE REFLEXTIVE THERMO PAVEMENT MARKING FURNISH AND INSTALL 5" YELLOW REFLEXTIVE THERMO PAVEMENT MARKING
	MD 144 (EAST PATRICK STREET) @ FRANKLIN STREET.	500)5 8	EA	SP 555	FURNISH AND INSTALL PERMANENT PREFORMED PAVEMENT MARKING LETTER
3.	ALL CABLE SHALL BE IDENTIFIED AND BROUGHT INTO THE CONTROLLER BY THE CONTRACTOR. THE CONTRACTOR SHALL NOTIFY MR. EDWARD RODENHIZER, SHA SIGNAL SHOP AT (410) 787-7650	500 80		EA EA	SP 555 808	FURNISH AND INSTALL PERMANENT PREFORMED PAVEMENT MARKING ARROW FURNISH AND INSTALL 250 W HPS LAMP AND LUMINAIRE
	SEVENTY-TWO (72) HOURS IN ADVANCE OF THIS WORK.	808	56 1	EA	808	FURNISH AND INSTALL 10' LIGHTING ARM ON SIGNAL STRUCTURE
4.	THE MARYLAND STATE HIGHWAY ADMINISTRATION DISTRICT #7 WILL BE GIVEN AT LEAST SEVEN (7) DAYS NOTICE TO PERFORM STRIPING THROUGH THE INTERSECTION AREA. CONTACT	80 80		2.7 CY 20 LF	80I 805	FURNISH AND INSTALL CONCRETE SIGNAL FOUNDATION FURNISH AND INSTALL I INCH LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT (DETECTOR WIRE SLEEVE)
	MR. DONALD DISTANCE AT (301) 694-2595 TO INITIATE THIS OPERATION.	80		10 LF	805	FURNISH AND INSTALL I ELECTRICAL CONDUIT-GALVANIZED SLEEVE
	MOT PLATES FOR THIS PROJECT WILL BE AS FOLLOWS: 104.107, 105.00, 01, 02, 105.101, 105.103, 105.105, AND 107.007.	80		5 LF	805	FURNISH AND INSTALL 2 IN. SCHEDULE 80 PVC CONDUIT - TRENCHED
	CONSTRUCTION DETAILS	808	2	40 LF	805	FURNISH AND INSTALL 2 IN. SCHEDULE 80 PVC CONDUIT - SLOTTED
A	INSTALL 30' GALVANIZED STEEL SQUARE POLE WITH TWIN SQUARE MAST ARMS 45 FOOT AND 30 FOOT, PEDESTRAIN SIGNAL HEAD, 10 FOOT LIGHTING ARM, LUMINAIRE, PHOTO CELL. (NOTE: TWO-4" SCHEDULE 80 90 DEGREE PVC CONDUIT BEND). POLE AND MAST	803		80 LF	805	FURNISH AND INSTALL 4 IN. SCHEDULE 80 PVC CONDUIT - TRENCHED
		80.		0 LF	805	FURNISH AND INSTALL 4 IN. SCHEDULE 80 PVC CONDUIT - BORED THE FOLLOWING DISTRICT # 7 AF
	ARMS TO BE PAINTED WITH VALMONT SPECIFICATION F-283-E BRONZE TONE OR APPROVED EQUAL. SEE FREDERICK CITY SPEC. PROV. NOS E-21 THROUGH E-21L	803 308 Hel		310 LF II EA	805 812	FURNISH AND INSTALL 4 IN. SCHEDULE 80 PVC CONDUIT - SLOTTED ** FURNISH AND INSTALL ELECTRICAL JUNCTION BOX. SEE FREDERICK CITY SPEC. PROV. NO'S E-15, E-15q, E-16 ** Are Robert 1. Figher.
B	INSTALL 30' GALVANIZED STEEL SQUARE POLE CUT AND CAPPED TO 21 FEET, WITH 45 FOOT SQUARE MAST ARM. NOTE: ONE-3" SCHEDULE 80, 90 DEGREE PVC CONDUIT BEND). POLE AND MAST ARM TO BE PAINTED WITH VALMONT SPECIFICATION F-283-E BRONZE TONE	802		0 LF	805	District Engineer
		806	4 3	0 LF	805	FURNISH AND INSTALL 2 IN. ELECTRICAL CONDUIT - GALVANIZED RISER
	OR APPROVED EQUAL. SEE FREDERICK CITY SPEC. PROV. NO'S E-21 THROUGH E-21L.	804	O 150	00 LF	810	FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING Mr. John Concannon Assistant District
C	INSTALL 10' GALVANIZED STEEL SQUARE PEDESTAL POLE WITH TWO WAY TWO SECTION 9 INCH PEDESTRAIN SIGNAL HEADS NOTE: ONE - 2" SCHEDULE 80 PVC CONDUIT BEND. POLE AND PEDESTRAIN SIGNAL HEAD TO BE PAINTED WITH VALMONT SPECIFICATION F-283-E BRONZE TONE OR APPROVED EQUAL. SEE FREDERICK CITY SPEC. PROV. NO'S E-9 THROUGH E-9C.	802	•	50 LF	815	FURNISH AND INSTALL SAWCUT FOR SIGNAL (LOOP DETECTOR) Engineer-Traffic Phone: (301) 624-8140
		804 804		150 LF	810	FURNISH AND INSTALL ELECTRICAL CABLE I CONDUCTOR NO. 4 AWG Mr. Leon Kerns
(D)	INSTALL 10' GALVANIZED STEEL SQUARE PEDESTAL POLE WITH ONE WAY - TWO SECTION 9 INCH PEDESTRAIN SIGNAL HEADS. NOTE: ONE 2" SCHEDULE 80 PVC CONDUIT BEND. POLE AND PEDESTRAIN SIGNAL HEAD TO BE PAINTED WITH VALMONT SPECIFICATION F-283-E BRONZE TONE OR APPROVED EQUAL. SEE FREDERICK CITY SPEC. PROV. NO'S E-9 THROUGH E-9C.	804		30 LF 250 LF	810 810	FURNISH AND INSTALL STRANDARD BARE COPPER GROUND WIRE (NO.6 AWG) FURNISH AND INSTALL ELECTRICAL CABLE 2 CONDUCTOR (ALUMINUM SHIELDED) Assistant District Engineer-Maintenanc Phone: (301) 624-8150
		804	6 2	75 LF	810	FURNISH AND INSTALL ELECTRICAL CABLE 2 CONDUCTOR (NO. 12 AWG)
		804;		50 LF	810	FURNISH AND INSTALL ELECTRICAL CABLE 2 CONDUCTOR (NO.14 AWG)
(E)	INSTALL NEMA 6 BASE MOUNTED CABINET AND CONTROLLER WITH ALL NECESSARY EQUIPMENT (NOTE: 2 - TWO INCH SCHEDULE 80, 2 - FOUR INCH SCHEDULE 80 PVC CONDUIT BEND,	804		75 LF	810	FURNISH AND INSTALL ELECTRICAL CABLE 3 CONDUCTOR (NO. 14 AWG)
F	INSTALL ELECTRICAL JUNCTION BOX. SEE FREDERICK CITY SPEC. PROV. NO'S E-15, E-15A, E-16.	804 804		60 LF 050 LF	810 810	FURNISH AND INSTALL ELECTRICAL CABLE 5 CONDUCTOR (NO.14 AWG) FURNISH AND INSTALL ELECTRICAL CABLE 7 CONDUCTOR (NO.14 AWG)
<u>©</u>	INSTALL 6'x30' LOOP DETECTOR IN 1/4 INCH FLEXABLE TUBING (3-6-3 TURNS).	808		24 EA	814	FURNISH AND INSTALL ELECTRICAL CABLE 7 CONDUCTOR (NO.14 AWG) FURNISH AND INSTALL 12" VEHICULAR TRAFFIC SIGNAL HEAD SECTION PAINTED BLACK
\bigoplus	INSTALL I INCH LIQUID TIGHT FLEXABLE NON-METALLIC CONDUIT AND FITTING (DETECTOR WIRE SLEEVE).	808		3 EA	814	FURNISH AND INSTALL 8* VEHICULAR TRAFFIC SIGNAL HEAD SECTION PAINTED BLACK
	INSTALL I INCH ELECTRICAL CONDUIT-GALVANIZED SLEEVE	of 800	2	8 EA		*FURNISH AND INSTALL BY PEDESTRAIN SIGNAL HEAD PAINTED BLACK
	INSTALL 2 INCH POLYVINAL CHLORIDE ELECTRICAL CONDUIT SCHEDULE 80 - TRENCHED.	805	el. 6	SO LF	812	FURNISH AND INSTALL WOOD SIGN SUPPORT 4 INCH x 6 INCH
(K)	INSTALL 4 INCH POLYVINAL CHLORIDE ELECTRICAL CONDUIT SCHEDULE 80 - SLOTTED	805		25 SF	813	INSTALL GROUND MOUNTED SIGNS
<u> </u>	INSTALL 4 INCH POLYVINAL CHLORIDE ELECTRICAL CONDUIT SCHEDULE 80 - BORED.	805	•Ab	9.9 SF	813	INSTALL OVERHEAD SIGNS
(M)	INSTALL 6' x 6' LOOP DETECTOR IN 1/4 INCH FLEXABLE TUBING (4 TURN)	466 800	0	1 EA	818	FURNISH AND INSTALL 30' GALVANIZED STEEL SQUARE POLE W/ TWIN MAST ARMS
(N)	INSTALL 24 INCH PREFORMED PAVEMENT MARKING TAPE FOR STOP LINE.	,				45 FOOT, 30 FOOT PAINTED W/ VALMONT SPECIFICATION F-283-E BRONZE TONE OR APPROVED EQUAL. (SEE FREDERICK CITY SPEC. PROV. NO'S E-21 THROUGH E-21L).
(i)	INSTALL 12 INCH PREFORMED PAVEMENT MARKING TAPE FOR CROSS WALK	466 803	779	I EA	818	FURNISH AND INSTALL 30' GALVANIZED STEEL SQUARE POLE CUT AND CAPPED TO
P	INSTALL 5 INCH YELLOW THERMOPLASTIC PAVEMENT MARKING	• .				21 FOOT W/ 45 FOOT MAST ARM PAINTED W/ VALMONT SPECIFICATION F-283-E BRONZE TONE.OR APPROVED EQUAL. (SEE FREDERICK CITY SPEC. PROV. NO'S E-21 THROUGH E-21L).
(a)	INSTALL 5 INCH WHITE THERMOPLASTIC PAVEMENT MARKING	16/2 800	-	2 EA	818	*FURNISH AND INSTALL 10' GALVANIZED STEEL SQUARE PEDESTAL POLE PAINTED
R	REMOVE EXISTING GROUND MOUNT SIGN					W/ VALUMONT SPECIFICATION F-283-E BRONZE TONE OR APPROVED EQUAL. (SEE FREERICK CITY SPEC.PROV.NO'S E-21 THROUGH E-21L).
<u>S</u>	INSTALL GROUND MOUNTED SIGN.	8008	Š	2 EA		CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE
T	INSTALL THERMOPLASTIC PAVEMENT MARKING ARROW	8018		4 EA	817	INSTALL PUSHBUTTON AND SIGN REVISIONS
(I)	INSTALL THERMOPLASTIC PAVEMENT MARKING TEXT "ONLY"	802(EA	816	INSTALL CONTROLLER AND CABINET-BASE MOUNT
V	FURNISH AND INSTALL 3" SCHEDULE 80 PVC CONDUIT - BORED	8034		5 EA	804	FURNISH AND INSTALL GROUND ROD-3/4' DIA. X 10' LENGTH
W	FURNISH AND INSTALL 2" ELECTRICAL CONDUIT - GALVANIZED RISER	8066		I EA	807	FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT(120/240V, IPH,3W) ASST. DIS
\otimes	FURNISH AND INSTALL 2" SCHEDULE 80 PVC CONDUIT - SLOTTED	NEG		20 SF		DENOVE EVICTING CIGN COGUND MOUNT
\bigcirc	FURNISH AND INSTALL 4" SCHEDULE 80 PVC CONDUIT - TRENCHED					CHEF, TRAFI

WIRING DIAGRAM	
C & # 189	
A.B.C.D, E.H.I.L	D, I, M, Q, R D, I, M, Q, R P, T, Y E E E E A, B, C, D, E, H, I, L, M, P, Q, R, T L H, L, Z P, T, Y E E E E C, D, E, H, I, L, M, P, Q, R, T L H, L, Z

THE FOLLOWING CONTACT PERSONS FOR DISTRICT # 7 ARE AS FOLLOWS:

Mr.James Buckalew Assistant District Engineer-Utility Phone: (410) 694-2145 Mr. Richard L. Daff

Chief Traffic

OperationsDivision

Phone: (410) 787-7630

The Power Company Representative is: MR. JEFF AKERS ALLEGANY POWER COMPANY P.O.BOX 488 FREDERICK, MARYLAND 21701 PHONE: (30I) 694-4425

A.B.C. 2 CONDUCTOR ELECTRICAL CABLE ALUMINUM SHIELDED (NO. 14 AWG)

F,G,H,I 2 CONDUCTOR ELECTRICAL CABLE (NO.14 AWG) J.K.L.M 3 CONDUCTOR ELECTRICAL CABLE (NO.14 AWG)

5 CONDUCTOR ELECTRICAL CABLE (NO.14 AWG) Q.R.S.T 7 CONDUCTOR ELECTRICAL CABLE (NO.14 AWG)

3 RUNS 1 CONDUCTOR ELECTRICAL CABLE (NO. 4 AWG) 2 CONDUCTOR ELECTRICAL CABLE (NO. 12 AWG TYPE T/C)

FHWA STATE

SHEET TOTAL NO. SHEETS

FED. AID PROJ. NO.

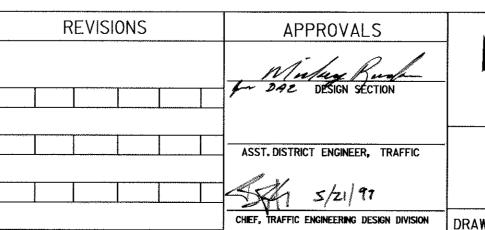
STRANDARD BARE COPPER GROUND WIRE NO 6 AWG W,X.Y,Z

POWER SOURCE PS LOOP WIRE

WIRING KEY

GROUND ROD

PHASE CHART	1 BSS	2 ® S©	3 P O C	4 P O C	5 ®>©	6 (1)	7 (P) (C)	8 吗 全	9 馬	10 原 史	11 吗 史		
PHASE 2 & 5	R	R	G G G	Gφ	G	R	R _G ►	DW	DW	DW	DW		
PHASE 1 & 5 CHANGE	R	R	G	Ç,	G	R	R _¥	DW	DW	DW	DW	Ī₩	
PHASE 2 & 6	G	G	G	G	G	R	R	DW	DW	DW	DW		
PED CLEAR	G	G	G	G	G	R	R	WK	WK	DW	DW		
PHASE 2 & 6 CHANGE	Υ	Υ	Υ	Υ	Υ	R	R	FL/DW	FL/DW	DW	DW	0	O
PHASE 4	R	R	R	R	R	G	Gg	DW	DW	DW	DW		A -
PHASE 4 CHANGE	R	R	R	R	R	Υ	Υ _¥	DW	DW.	DW	DW		
PHASE 4 ALT	R	R	R	R	R	G	G	DW	DW	WK	WK	٩	
PED CLEAR	R	R	R	R	R	G	G	DW	DW	FL/DW	FL/DW		† ⊢
PHASE 4 ALT CHANGE	R	R	R	R	R	Υ	Υ	DW	DW	DW	DW		
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	DARK	DARK	DARK	DARK	-	A





SCALE:

1" = 20'

2/16/99

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION Office of Traffic & Safety

SHEET NO.

TRAFFIC ENGINEERING DESIGN DIVISION

GENERAL INFORMATION
MD. 144 (EAST PATRICK STREET.) &
FRANKLIN STREET LOG MILE: 10 LOG MILE: 1001440.405 DRAWN BY: C. G. MUNZ STP-G-7802 (5) G TS NO. M. WOLNIAK FR345A5I

FREDERICK

S.H.A. NO.

COUNTY